SCHOOL OF APPLIED SCIENCES

The School of Applied Sciences SGVU established in 2003 is powered with a strong tradition of research since its inception and the programs designed are a blend of core science and interdisciplinary topics that will serve as a launching pad for attractive career opportunities in academia and industry. The novelty of these programs lies in its interdisciplinary approach, strong flavor of engineering, exposure to disciplines in the advanced Science & Technology, and research projects. The graduates of School will obtain a Bachelor and Masters of Science degree with the specialization in core Science, Virology, Biotechnology, Microbiology, and Forensic science. The syllabus is at par with the reputed institutes and universities under guidelines of University Grant Commission, New Delhi.

Salient Features:

The school of applied sciences focuses on Research and Academia as the two most powerful tool for developing a sustainable society. Therefore, the school will provide an excellent research output in terms of publications and attaining the recognition from central funding agencies.

- **State-of-the Art Laboratories**
- **Academia Industry Linkage**
- **Experienced Faculty**
- **Dynamic Curriculum:**
- **Biotechnology Business Incubator**

SGVU Biotechnology Business Incubator was setup in collaboration with Department of Science & Technology (DST), Govt of Rajasthan and Suresh Gyan Vihar University Jaipur to foster innovation, research and entrepreneurial activities in courses offered by school of applied sciences viz. biotechnology, microbiology, virology & immunology and forensic sciences. It was established in 2018 under the umbrella of Trust - SGVU –Ecosystem for Innovations and Entrepreneurship Trust with the vision of transforming knowledge into wealth, to create a generation of zealous entrepreneurs and to convert novel research into valuable intellectual property.

The Biotechnology Business Incubator is aimed to promote start-ups and entrepreneurship in the production of Biotechnology, Agro biotech, Nano-biotechnology, Fermentation technology, Phyto- pharmaceuticals, Renewable energy and Social Entrepreneurship. The incubation center provides opportunities to students enrolled in different programs of School of Applied Sciences to attain hands on training of sophisticated instruments via workshops and training modules.

The School of Applied Sciences is equipped state of the art instruments relevant to targeted Industries and R&D sector.

1. High Pressure Liquid Chromatography (HPLC)
2. Thermal Cycler
3. Gel Documentation Unit
4. Double beam UV-Vis Spectrometer
5. Inverted Microscope
6. CO2 Incubator
7. Water Analyzer (PH, Salinity, Turbidity, DO, Temperature, Conductivity)
8. Double Distilled Unit
9. Microtome
10. Weighing Balance (1µg)
11. Microwave oven
12. Vacuum pump
13. Digital colony counter
14. -20 ˚C deep freezer
15. Cooling Centrifuge
16. Cooling Incubator (B.O.D)
17. Electrophoresis Units (SDS, & Horizontal)
18. Rotavapor
19. Flame Photometer
20. UV- Trans Illuminator
21. UV- Spectrophotometer 119
22. Fluorescent microscope
23. Dark field Microscope
24. Biosafety Cabinet Class II B2
25. Sonicator
26. -80 Refrigerator
27. Liquid Nitrogen Tank
28. Tube Furnace
29. Photothermal Therapy setup

30. Western Blotting

List of Other Govt of India Funded Projects received by School of Applied Sciences

Sr. No.	***Project Title***	***Supporting Agency***	***Scheme***	***Name of PI***	***Year of start***	***Amount* (Rs. in lakhs)**
i.	Intramitochondrial nanogold production using functional organic nanocarriers for chemo photothermal cancer therapy	**DST SERB**	**EMEQ Grant**	Dr Krishan kumar	**2024**	**54laks**
ii.	Bioprospecting of Fungal endophytes for heparanase inhibitors: a targeted molecular approach for cancer therapeutics	DST SERB	Start-up Research Grant	Dr. Neha Kapoor	2022	31.55
iii.	In-situ Raman study of electrode / electrolyte interface of MHx (M=Mg, V, Ti, LaNi5) based all-solid -state Li-ion battery	UGC-DAE Consortium For Scientific Research	CRS Project Grant	Dr. Ankur Jain	2022	24.3
iv.	Light Weight Metal Composite with Silicon for Portable Hydrogen Storage Reactors LiSi HyStoRe	Indo-Japan Exchange Project NIIT Rourkela, DST-JSPS	Exchange Project	Dr. Ankur Jain	2022	15
v.	Impact of Engineered Nano-particles on micro biome of Agroecosystem.	DST Rajasthan	R&D	Dr Gaurav Sharma	2018	7.782
vi.	Biotech Business Incubator	DST Rajasthan	Incubation Setup	Dr Gaurav Sharma	2018	60

Courses offered by School of Applied Sciences

Course	**Duration**	**Eligibility**
Bachelors in Science Programmes as per NEP		

B.Sc. (Honors /Honors with Research) Biotechnology	04 years (08 semesters)	10+2 (PCM/PCB) with 50% marks
B.Sc. (Honors /Honors with Research) Forensics	04 years (08 semesters)	10+2 (PCB/PCM) with 50% marks
B.Sc. (Honors /Honors with Research) Physical Science	04 years (08 semesters)	10+2 (PCM) with 50% marks
B.Sc. (Honors /Honors with Research) Biological Science	04 years (08 semesters)	10+2 (PCB) with 50% marks
Master in Science (M.Sc.) Programmes with Specialization		
(Biotechnology)	02 years (04 semesters)	Bachelor's degree with at least 55% marks (5% relaxation in case of SC/ST category) in any branch of Science / Agriculture/ Pharmacy / Veterinary / Medicine (MBBS) / Medical Lab Technology / Nursing.
Microbiology	02 years (04 semesters)	Bachelor's degree with at least 55% marks (5% relaxation in case of SC/ST category) in any branch of Science / Agriculture/ Pharmacy / Veterinary / Medicine (MBBS) / Medical Lab Technology / Nursing.

Chemistry	02 years (04 semesters)	Bachelor's Degree with at least 55% marks in aggregate (5% relaxation in case of SC/ST category) in Science with Chemistry as compulsory subject.
Physics	02 years (04 semesters)	Bachelor's Degree with at least 50% marks in aggregate (5% relaxation in case of SC/ST category) in Science with Physics as compulsory subject.

B.Sc. Programmes with specializations

(1) Biotechnology

B.Sc. Biotechnology involves the study of applied biology and its applications that necessitates the transformation of living organisms and designing new formulations for developing the products essential for human welfare. It is the most innovative and rapidly emerging arena that consists of a combination of biology and technology all-together.

(2) Forensic Sciences

It is a course that embraces the utility and application of fundamental scientific knowledge to the crime investigation thoroughly. Forensic science employs the basic use of scientific examination procedures to examine the information required to assist the legal and law enforcement systems. Our program is well balanced with mathematics and science, including statistics, biology and chemistry and also the most essential components that assist in an investigation like Psychiatry, Odontology and Forensic Medicine. Internships increase the exposure to crime laboratories and investigation agencies.

(4) Pass Course (PCM)

B.Sc. in PCM is a graduation course for the highly motivated science stream students with refined teaching methodology combined with the usage of cutting-edge technology making our every lecture and laboratory more learning and interactive. This course focuses on the objective that

caters to the best science-based education for graduates, offers the students an in-depth understanding of the world around them, which equips them to contribute great value in several new-generation disciplines like physical, chemical & mathematical sciences. This course is specially designed to develop analytical and entrepreneurial capabilities in science students.

(5) Pass course (CBZ)

B.Sc. in CBZ that is Chemistry, Botany, and Zoology, is a combined course which teaches about all the three subjects in detail. Candidates learn the fundamentals of chemical and biological sciences and their applications. This course consists of implementing the required talent and ability based on sound practical and theoretical expertise that embarks up the development of modern society.

Master in Science (M.Sc.) Programmes with Specialization

(1) Biotechnology

The program has been designed originally on four semesters that facilitate and empower the scholar to eligible for employment in every field, specific industry and intensive research. Biotechnology being the applied biology sector in Make in India, Govt of India initiative is a major accelerating sector in the field of applied biology. We train and inspire students by introducing them to cutting edge instrumentation and techniques being used in current scenarios.

(2) Microbiology

Microbiology is primarily composed of different medical outlooks of virology, bacteriology, immunology, and infections, etc. The course program also encounters the modern-day application of Medical Microbiology in the field of Medical Science. Medical Microbiology nowadays has become the most influential academic program in the array of Medical Science as this course generates knowledge-orientation, critical thinking, applicability, and both practical and in-depth theoretical skills.

(3) Chemistry

The Master's Program in Chemistry covers all aspects of the different branches of chemistry and lays emphasis on detailed understanding of the fundamental principles and on training in appropriate computational and experimental methods and application in solving complex problems in various fields such as Pharmaceutical, biochemical and petrochemicals.

(4) Physics

Our master program in Physics which prepares graduates for careers in research and teaching at the university level or research in industrial laboratories. This course aims to develop the skills like mathematical, problem solving, communication skills and critical thinking which helps in understanding rich scientific facts and data.

Placements:

- **Scientist and Researcher:** In research organizations of National/International repute such as DBT, DST, BARC, DRDO. CRI, CSIR, IISER, NIPER, RCB, TIFR, IISC, ARB, FCI, NCL, NPL, NPCIL etc.
- **Academician:** In various IITs/ NITs/ IISERs/ CSIR Labs/ Central Universities/ State Universities/ Deemed Universities etc.
- Health care sector, Biopharmaceuticals, Nutraceuticals, Food industry, Agricultural sector etc. contains some of the pioneering industries.

Our top Industrial recruiters: Biocon, Sun Pharmaceutical industries Ltd., Dr. Reddy`s Laboratories, Ranbaxy, Mankind Pharma, Antonpaar India Ltd., Ozone Pharmaceuticals Ltd., JP Biotech, Patanjali Bio Research Institute Pvt. Ltd, Intas Biopharmaceuticals, Windlas Biotech Pvt. Ltd., Zydus, Cadilla, Eppendorf, Lupin